WHAT IS CLAIMED IS:

1. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period, a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing step of:

applying, during the selection period, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode.

2. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period (T_r), a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the period T_r, two additional voltage levels having different polarities, the same constant modules (V_m) of deviation from V_o-level, and constant and equal duration ($t_m/2$) to the signal electrode;

applying, during the period T_r after applying a voltage of one polarity about V_o-level and before applying a voltage of other polarity about V_o-level, the third additional V_o-voltage level having a constant duration (t_o) to the signal electrode.

3. The method of claim 2, wherein durations of the basic voltage levels applying to the signal electrode are varied for obtaining a particular current value of brightness of the selected display elements and are adjusted in such a way

that under one-line selection, during period T_r, the sum duration of all basic voltage levels is equal to constant value ($T_r - t_m - t_o$) or,

that under multiple-line selection, during all periods of selection the same display elements in frame time, the averaged over period T_r sum of products of duration of every basic voltage level unequal to V_o to square of inverted ratio of modulus of deviation of the said level from V_o-level to modulus of deviation (from V_o-level) of the basic level for the said display one-line selected by the said method (with the same values $t_m/2$ and V_m of the said pair of additional levels and with the same duration t_o of the said third additional V_o-level) is equal to constant value ($T_r - t_m - t_o$).

4. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period (T_r), a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the period T_r, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode, the said additional voltage levels being

allocated to the boundary portions of the period T_r so that one level is allocated to the beginning portion and the other level is allocated to the end portion of the period T_r;

applying, during the period T_r, voltage levels to the signal electrode in direct or in reverse order; and

alternating, in succeeding periods T_r, the said orders of applying of voltage levels to the signal electrode on the basis of changing of the polarity of the voltage deviation from V_o- level in the beginning (and, accordingly, in the end) of the period T_r so that the positive polarity being set in the beginning of one period T_r and the negative polarity being set in the beginning of the next period T_r.

5. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period (T_r), a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the period T_r, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode, the said additional voltage levels being allocated to the boundary portions of the period T_r so that one level is allocated to the beginning portion and the other level is allocated to the end portion of the period T_r;

applying, during the period T_r, voltage levels to the signal electrode in direct or in reverse order; and

applying, during the period T_r, voltage levels to adjacent signal electrodes or to signal electrodes located one or two electrodes further or to signal electrodes having another type of activation sequence so that the levels allocated to the beginning

portion (and, accordingly, to the end portion) of the period T_r have deviations of opposite polarities from V_o-level.

6. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages (V_r) to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period (T_r), a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the period T_r, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode, the said additional voltage levels being allocated to the boundary portions of the period T_r so that one level is allocated to the beginning portion and the other level is allocated to the end portion of the period T_r;

applying, during the period T_r, voltage levels to the signal electrode in direct or in reverse order; and

alternating, during periods T_r of selecting the same scanning electrode or the same group of scanning electrodes where the scanning voltages or the scanning voltage groups have identical or opposite polarities about V_o-level, the said order of the applying the signal voltage levels to the signal electrode (during period T_r) in succeeding frame time periods or in a frame time or in two frame time or in accord with other order of comparison in time by setting alternately the same and opposite directions of the deviation (from V_o-level) of the signal voltage level allocated to the beginning (and, accordingly, to the end) portion of the period T_r and of the deviation (from V_o-level) of the voltage V_r applied to the said same selected scanning electrode or to the same selected scanning electrode of the said same selected group.

7. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period (T_r), pulses of voltage to signal electrode, the said pulses setting a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the period T_r, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration ($t_m/2$) to the signal electrode, the said additional voltage levels being allocated to the boundary portions of the period T_r so that one level is allocated to the beginning portion and the other level is allocated to the end portion of the period T_r;

applying, during the period T_r, voltage levels to the signal electrode in direct or in reverse order so that the order of their applying to the signal electrode is alternated in succeeding periods T_r; and

splitting the voltage pulses applied to signal electrodes into a number of groups being related to different electrodes and shifting the pulses in time concerning their nominal positions in the period T_r so that the values of shifting time are the same for the pulses of a single group, but are different for the pulses of different groups, and constant for certain period, after termination the said time period, other values of shifting time are set in certain or in all groups of voltage pulses or other aggregate of groups of voltage pulses is formed with different values of shifting time in various groups, and the other values of shifting time are set constant for the next time period, after termination of which the said process of either changing or setting constant

values of shifting time are continued providing zero average deviation of duration of each said additional level from its nominal duration.

8. The method of claim 7, wherein modulus of shifting times of voltage pulses applied to a group of the signal electrodes are set in the range of values from zero to $t_m/2$.

9. The method of claim 7, wherein, after termination of the time period during which the shifting time values of groups of voltage pulses applied to the signal electrodes are kept constant, the latest shifting time value are set in the group of pulses, each having the earliest shifting time value, the previous shifting time value is set in the group of pulses, each having the next after the earliest shifting time value, and such changing of shifting time values is applied in other groups up to group of pulses, each having the earliest shifting time value, which are changed to the latest shifting time value.

10. The method of claim 7, wherein a group of voltage pulses having the same shifting time is formed for a group of signal electrodes in such a way that each electrode is distant from other electrodes in the group.

11. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying pulses of scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period, pulses of voltage to signal electrode, the said pulses setting a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level, the said levels setting nominal values of mean square voltage on the selected cell or cells for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the selection period, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode, the said additional levels setting practically constant (in time) deviations from the nominal values of mean square voltage on cells connected with the signal electrode, the said deviations being caused by distortions of a shape of the voltage pulses in process of their propagation along the signal electrode;

providing, during a frame time period, a single or several additional time intervals (t_c);

applying, during some mentioned single or several intervals t_c, compensative voltages $V_{com}(i)$ to each i-th scanning electrode, beginning with a certain electrode, or/and during other mentioned single or several intervals t_c, applying compensative voltages V_{com} (j) to each j-th signal electrode, beginning with other certain electrode, the said voltages V_{com} (i) or/and, respectively, V_{com} (j) having values or/and durations specific to each electrode and giving the total or a partial compensation of the deviations of the mean square voltages on the sells of the i-th scanning electrode from their nominal values or/and, respectively, of the deviations of the mean square voltages on the sells of the j-th signal electrode from their nominal values, the said deviations initiated by the said distortions of shape of the signal voltage pulses in process of their propagation along the signal electrode, or/and, respectively, initiated by distortions of shape of the scanning voltage pulses in process of their propagation along the scanning electrode; and

applying, during the mentioned intervals t_c, the reference voltage or a quasi-reference voltage or a quasi-reference voltage on average or their combination to the scanning or/and to the signal electrodes free from the said compensative voltages.

12. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selection period, a basic voltage level or levels consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode , the said levels setting nominal values of mean square voltage on the selected cell or cells for obtaining current values of brightness of a selected display element or of a group of selected display elements; the distinguishing steps of:

applying, during the selection period, two additional voltage levels having different polarities, the same constant modules of deviation from V_o-level, and constant and equal duration to the signal electrode, the said additional levels setting practically constant (in time) deviations from the nominal values of mean square voltage on cells connected with the signal electrode, the said deviations being caused by distortions of a shape of the voltage pulses in process of their propagation along the signal electrode;

applying, during the selection periods, additional compensative voltages to selected scanning electrodes, beginning with a certain electrode, and superimposing the said compensative voltage on the scanning voltage, the said compensative voltage having value or/and duration specific to the selected scanning electrode and total or a partial compensating the deviations of the mean square voltages on the cells of the selected scanning electrode from their nominal values, the said deviations being caused by the said distortions of shape of the signal voltage pulses in process of their propagation along the signal electrode.

13. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes in one-by-one or group-by-group sequence, applying pulses of scanning voltages to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying pulses of voltage to signal electrode, the said pulses setting basic voltage level or levels setting nominal values of mean square voltage on selected sells for obtaining nominal values of brightness of selected display elements; the distinguishing step of:

forming voltage pulses in the shape providing total or partial self-compensation of spurious changes of the mean square voltages on the selected sells, the said changes initiated by distortions of fronts and tails of the pulses in process of their propagation along display electrode.

14. The method of claim 13, wherein the front of pulse is formed in stepwise shape or in the shape similar to stepwise one.

15. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, comprising the steps of:

selecting scanning electrodes two times or more times a frame in sequence two by two, applying scanning voltages (V_{r1} and V_{r2}) to selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes, wherein polarities of deviation voltages V_{r1} and V_{r2} from V_o-level are set either same or opposite (or in reverse order, or in mixed order);

applying, during a selecting period (T_r), a basic voltage level or levels having the same modulus Vc of deviation from V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of selected display elements; and the distinguishing step of:

forming the said unequal to V_o-level basic voltage levels being composed of an information component and of quasi-reference equalizing components such

that the duration and the polarity of deviation from V_o-level of the information component, during the period T_r of the applying the scanning voltages V_{r1} and V_{r2} with the same polarities of deviation from V_o-level, being set in ratio to the value of half sum of brightness of the selected display elements (or with correction of the ratio

taking into account an non-linearity of an electro-optic behavior of the display element),

that the duration and the polarity of deviation from V_o-level of the information component, during the period T_r of the applying the scanning voltages V_{r1} and V_{r2} with opposite polarities of deviation from V_o-level, being set in ratio to the value of half difference between brightness of the selected display elements (or with the said correction of the ratio taking into account the said non-linearity), and

that the common duration of the quasi-reference equalizing components being set, during any or both periods T_r in the frame of selecting the same display elements, to bring the common duration of all levels unequal to V_o (for the said same selected display elements) to constant value.

16. The method of claim 15 including claim 1, wherein the said constant value of common duration of all signal voltages levels unequal to Vo and applied to the signal electrode for the same elements selected in both periods T_r of the frame, the levels including information component, equalizing component, and two additional levels with different polarities, constant modules of deviation from V_o-level equal to V_c, and constant and equal duration (t_m/2), the said additional levels set during every period T_r, is equal to (T_r+t_m).

17. A device for driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, the display driven by the method variants of claims from 1 to 16 realized separately or in their combinations, comprising:

a voltage level generator (or power supply block) and a bunch of voltage pulsers for the display electrodes, each voltage pulser containing a block setting timing voltage levels to an output electrode, the output electrode, and an output transistor block connected with the output electrode, with the voltage level generator and with the block setting timing voltage levels connected with the voltage level generator, characterized in that

the block setting timing voltage level to the output signal electrode contains technical means to timing additional voltage levels of constant duration, applying to the signal electrode; and

the output transistor block is fixed in such a way that the output resistances for different voltage levels of the said block has the same values, or the deviation of values does not exceed 10%.

18. A method of driving a display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, having value of display parameter N_{max} greater or equal to number N_{maxo}, where N_{maxo} is the minimum value of N_{max} of the display capable to correct driving by voltage waveforms in accordance with the method variants of claims from 1 to 16, realized separately or in their combination, comprising the steps of:

selecting scanning electrodes in sequence one by one or group by group, applying scanning voltages (V_r) to the selected scanning electrodes, and applying a reference voltage (V_o-level) to the non-selected scanning electrodes;

applying, during a selecting period, a basic voltage level or levels (Vc) consisting of a level or levels unequal to V_o-level or/and of V_o-level to a signal electrode for obtaining current values of brightness of a selected display element or of a group of selected display elements; and the distinguishing steps of:

applying the voltages V_r about $|V_{ro}|\sqrt{1-\eta}$ to the scanning electrodes,

applying the voltages V_c about $|V_{co}|\sqrt{1+\eta}$ to the signal electrodes,

wherein $|V_{ro}|$ and $|V_{co}|$ are the modules of the voltages V_r and V_c applied to another (reference) display having the value of N_{max} equal to N_{maxo}, the said other display driven correctly by the method of the mentioned claims, and η is a number parameter for tailoring of the voltages V_r and V_c to the correct driving or close to the correct driving of the said display having N_{max} greater or equal to N_{maxo}.

19. A display having a panel including substrates having an array of scanning electrodes on one of substrate, an array of signal electrodes on other substrate, and liquid crystal cells between the said electrodes at their intersection points, the said cells generating display elements of the display, characterized in that

the display elements are made having the value of display parameter N_{max} greater or equal number N_{maxo}, where N_{maxo} is greater number N and N_{maxo} is the minimum value of N_{max} of a display capable to correct driving by voltage waveforms in accordance with the method variants of claims from 1 to 16, realized separately or in their combination.